UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/330,949	06/11/1999	JURGEN JASPERNEITE	(H)99PH1261U	1052

7590 05/10/2004

M ROBERT KESTENBAUM
11011 BREMUDA DUNES NE
ALBLUQUERQUE, NM 87111

EXAMINER	
GEORGE, KEITH M	

ART UNIT	PAPER NUMBER
2663	12

DATE MAILED: 05/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/330,949	JASPERNEITE ET AL.	
	Examiner	Art Unit	
	Keith M. George	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-9,12 and 14-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-9,12 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because newly submitted figure 3 requires reference numbers that can be referred to in the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Specification

4. The disclosure is objected to because of the following informalities: 37 CFR 1.74 requires a brief description of each drawing in the specification. Newly added drawing 3 has not been included in the brief description of the drawings.

Appropriate correction is required.

Claim Objections

5. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 15 simply states that the physical layer of claim 1 is constituted according to IEEE 802.3u; claim 5 has already placed this limitation on claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 5-9 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al., U.S. Patent 5,970,430, hereinafter Burns, in view of Julyan, U.S. Patent 5,809,249, hereinafter Julyan.

8. Referring to claims 1 and 9, Burns teaches that to implement and perform communication and control activities, the Fieldbus protocol uses three general categories of technology identified as a physical layer, a communication "stack," and a user layer. The physical layer, which corresponds to OSI layer 1, is embedded in each field device and bus and operates to convert electromagnetic signals received from the Fieldbus transmission medium into messages capable of being used by the communication stack of the field device. The communication stack, which is present in each Fieldbus device, includes a data link layer, which corresponds to OSI layer 2, a

Fieldbus access sublayer, and a Fieldbus message specification layer, which corresponds to OSI layer 6 (a fieldbus component comprising a data link layer and a physical layer) (column 12, lines 8-37). Burns goes on to teach that the data link layer converts messages on the communication stack into physical Fieldbus signals and encodes these signals with clock information to produce a "synchronous serial" signal having a proper preamble for transmission on a two-wire bus (matching the data link layer to the physical layer) (column 12, lines 59-63). Burns teaches all of the above with the possible exception of a standardized medium-independent interface that connects the data link layer to the physical layer. Julyan teaches that the OSI Reference Model for communications systems includes a physical layer (column 1, lines 30-34). And in an IEEE 802.3u CSMA/CD LAN implementation of the physical layer, a reconciliation sublayer and a medium independent interface sublayer perform function necessary to interconnect the physical layer with the data link layer (matching the data link layer to the standardized medium-independent interface) (column 1, lines 34-40). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the physical layer of Burns with a reconciliation sublayer and a medium independent interface as taught by Julyan. One of ordinary skill in the art would have been motivated to do this because Burns teaches that the Fieldbus protocol follows the standard OSI model and Julyan is teaching a method of implementing the physical layer of the OSI model to connect the physical layer to the data link layer, which is also a function described by Burns.

9. Referring to claims 5, 14, 15 and 16, Burns and Julyan teach the system described in reference to claim 1 above where it was clearly shown that Julyan is teaching an implementation that utilizes IEEE 802.3u (column 1, lines 34-35).

10. Referring to claims 6-8, Burns and Julyan teach the system described in reference to claim 1 above and Burns also teaches that data may be sent over the different bus segments at the same or different communication baud rates or speeds according to the Fieldbus protocol. For example, the Fieldbus protocol provides a 31.25 Kbit/s, a 1.0 Mbit/s and a 2.5 Mbit/s communication rate (column 8, lines 33-39 and figure 1).

11. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns and Julyan as applied to claim 1 above, and further in view of Witkowski et al., U.S. Patent 5,892,926, hereinafter Witkowski. Burns and Julyan teach the system described in reference to claim 1 above with the possible exception that the data link layer comprises a Media Access Control layer, a basic connection layer, a peripheral data connection layer and a network management layer. Witkowski teaches that according to the IEEE 802.3u standard, the data link layer is divided into two sub-layers, the logical link control (LLC) sublayer at the top and the Media Access Control (MAC) sublayer at the bottom. The LLC sublayer provides an interface for the Network layer protocols while the MAC sublayer provides access to a particular physical encoding and transport scheme of the Physical layer (column 1, lines 56-63). At the time the invention was made, one of ordinary skill in the art would clearly understand that the MAC and LLC sublayer are performing the functions indicated by the Media Access Control layer, basic connection layer, peripheral data connection layer and network management layer. One of ordinary skill in the art would have been motivated to do this because by using an established standard, interoperability with a variety of components that also implement the standard would be possible.

Response to Arguments

12. Applicant's arguments filed 1 March 2004 have been fully considered but they are not persuasive.

13. On page 7 of the Amendment, applicant argues that a filedbus component is claimed that can be directly - without a bridge or gateway - connected to a high-speed transmission medium such as Fast Ethernet. In response, while it is unclear exactly which claim applicant is referring to that contains these limitations; the independent claims certainly do not contain these limitations. Independent claims 1 and 9 refer to high-speed data transmission but do not limit the transmission to Fast Ethernet. The independent claims also utilize the transitional phrase "comprising" which is inclusive or open-ended and does not exclude additional, unrecited elements or method steps, see MPEP § 2111.03, therefore there is no limitation in the claim that prohibits the use of a bridge or gateway.

14. On page 8 of the amendment, applicant admits that figure 3 teaches a typical Ethernet frame. Since there is no element of the invention taught in this figure, a legend such as --Prior Art-- is required.

15. In response to applicant's argument on page 10 that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Burns has clearly taught that the fieldbus protocol may be modeled by the

well-known Open Systems Interconnect (OSI) layered communication model (column 12, lines 22-24). Julyan clearly teaches the OSI reference model in figure 1 and an implementation of the physical layer in figure 2. A reconciliation Sublayer and a Medium Independent Interface Sublayer are also shown in Figure 2 and perform functions necessary to interconnect the physical layer to the data link layer (column 1, lines 36-40). Clearly, one of ordinary skill in the art would understand that Burns is teaching that the fieldbus protocol can be modeled by the OSI model. For further understanding of the OSI model, one of ordinary skill in the art would refer to the teachings of Julyan that teach a Medium Independent Interface for connecting the physical layer to the data link layer. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Burns and Julyan to create a method of transferring fieldbus protocol data as taught by Burns to a IEEE 802.3u CSMA/CD LAN as taught by Julyan.

16. On page 10-11 of the amendment applicant argues that Burns is not a citable prior art because the publication date is after the U.S. filing date and the priority date of the present application. While this may be the case, Burns was filed on September 3, 1997 which makes it valid prior art under 35 U.S.C. 102(e) and prior art available under 35 U.S.C. 102 is available under 35 U.S.C. 103, see MPEP § 2141.01 and 2136.

17. On page 11 of the amendment, applicant again argues that claims 1 and 9 teach a data link layer based on a filedbus protocol and a physical layer based on a high-speed transmission protocol such as Fast Ethernet. Neither claims 1 or 9 place any limitation on the high-speed data transmission requiring it to be Fast Ethernet.

18. On page 12 of the amendment, applicant argues that Burns discloses connecting field devices without any changes via bridges to a high-speed transmission medium and that Burns does not suggest nor hints to modify the field device. While this may be the case, the use of the transitional phrase "comprising" has been clearly explained above and it does not prohibit additional elements to be present in the prior art. It has also been clearly shown above that the motivation to combine Burns and Julyan is contained in Julyan. It is the combination of these two references that clearly teaches the invention as claimed.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith M. George whose telephone number is 703-305-6531. The examiner can normally be reached on M-Th 7:00-4:30, alternate F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith M. George
4 May 2004

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

5/6/04